



Transistors

●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions	
Collector-base breakdown voltage	BV <sub>CB0</sub>	40	–	–	V	I <sub>c</sub> =50μA	
Collector-emitter breakdown voltage	BV <sub>CEO</sub>	32	–	–	V	I <sub>c</sub> =1mA	
Emitter-base breakdown voltage	BV <sub>EBO</sub>	5	–	–	V	I <sub>E</sub> =50μA	
Collector cutoff current	I <sub>CB0</sub>	–	–	1	μA	V <sub>CB</sub> =20V	
Emitter cutoff current	I <sub>EBO</sub>	–	–	1	μA	V <sub>EB</sub> =4V	
DC current transfer ratio	2SD1766,2SD1758, 2SD1862	h <sub>FE</sub>	82	–	390	–	V <sub>CE</sub> =3V, I <sub>c</sub> =0.5A
			120	–	390		
Collector-emitter saturation voltage	V <sub>CE(sat)</sub>	–	0.5	0.8	V	I <sub>c</sub> /I <sub>B</sub> =2A/0.2A	
Transition frequency	f <sub>r</sub>	–	100	–	MHz	V <sub>CE</sub> =5V, I <sub>E</sub> =–500mA, f=100MHz	
Output capacitance	C <sub>ob</sub>	–	30	–	pF	V <sub>CB</sub> =10V, I <sub>E</sub> =0A, f=1MHz	

\* Measured using pulse current.

●Packaging specifications and h<sub>FE</sub>

Type	h <sub>FE</sub>	Package	Taping		
		Code	T100	TL	TV2
		Basic ordering unit (pieces)	1000	2500	2500
2SD1766	PQR	○	–	–	–
2SD1758	PQR	–	○	–	–
2SD1862	QR	–	–	–	○

h<sub>FE</sub> values are classified as follows :

Item	P	Q	R
h <sub>FE</sub>	82 to 180	120 to 270	180 to 390

●Electrical characteristic curves

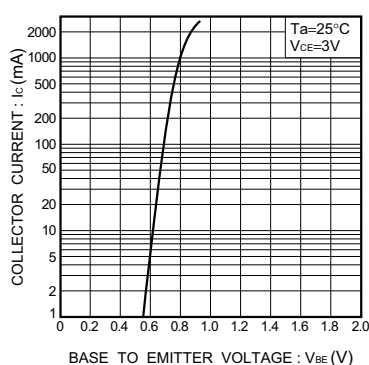


Fig.1 Grounded emitter propagation characteristics

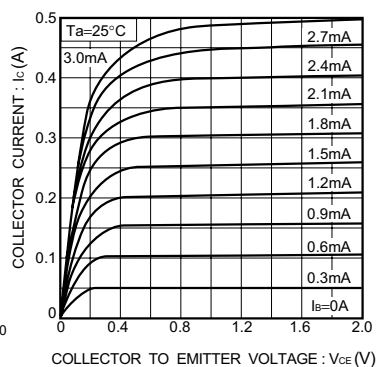


Fig.2 Grounded emitter output characteristics

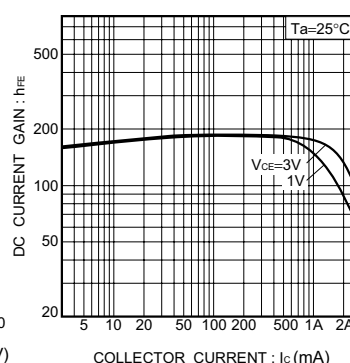


Fig.3 DC current gain vs. collector current

Transistors

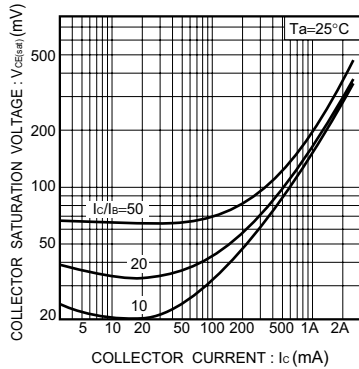


Fig.4 Collector-emitter saturation voltage vs. collector current

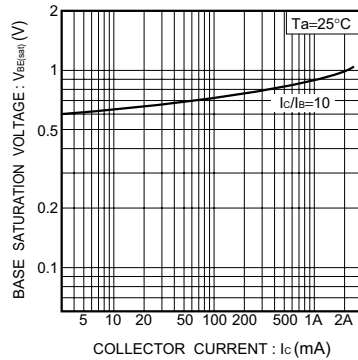


Fig.5 Collector-emitter saturation voltage vs. collector current

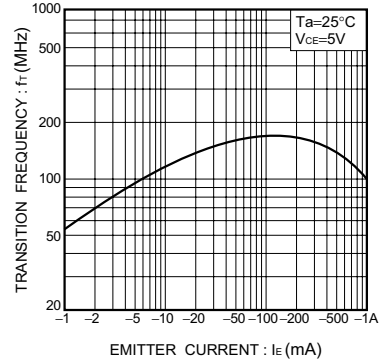


Fig.6 Transition frequency vs. emitter current

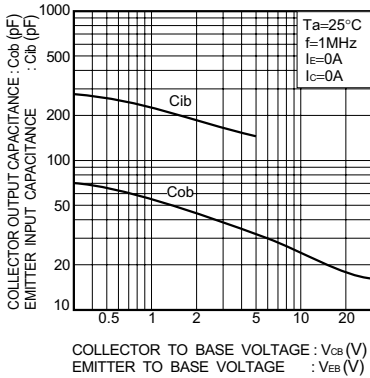


Fig.7 Collector output capacitance vs. collector-base voltage  
Emitter input capacitance vs. emitter-base voltage

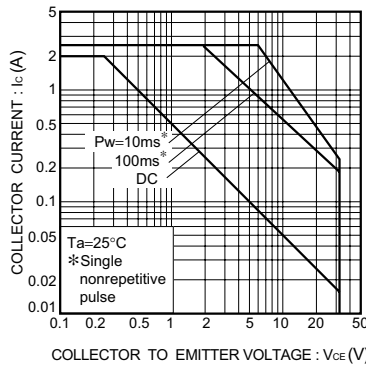


Fig.8 Safe operating area (2SD1766)

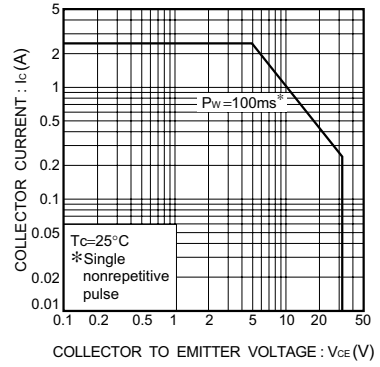


Fig.9 Safe operating area (2SD1758)

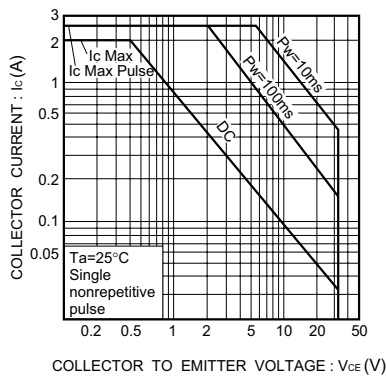


Fig.10 Safe operating area (2SD1862)

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